Metrics Planning and Reporting (MPAR)

Program-Level Metrics - Purpose Statements

April 20, 2004 (revised May 13, 2004)

This report is provides purpose statements for each of the recommended program level metrics contained in the Program Level Metrics Definition Document (March 30, 2004) Attachment A.

The overall purpose served by the set of program level metrics is to enable ESE (i.e., the ESE program office(s) responsible for definition and success of the ESE science, applications, and education programs) to assess the overall performance of ESE-funded activities (e.g. REASONS) in their individual roles as elements of the ESE program, and ensure accountability of the activities for effective use of the ESE resources provided to them to carry out their role. The metrics collection will facilitate publication of activities' successes as well as help ESE identify and resolve with the activity any difficulties it may encounter.

The 10 program level metrics fall into three groups; a measure of the activity's user community (metrics 1 and 2), a measure of the activity's production and distribution of products and services (metrics 3, 4, 5, 6, and 7), and a measure of the activity's support for ESE science, applications, and/or educational objectives (metrics 8, 9, and 10).

The metrics provided by an activity will be assessed by ESE in the context of the activity's mission statement or ESE program role. For example, a science activity might have no role in applications or education, and metrics 9 and 10 would not apply to it, or an activity might have a role in applications and education, and metric 8 would not apply to it. Similarly, the measures of activity user community or product distribution will be evaluated in the light of each activity's ESE role and resources it uses. The magnitudes of these metrics that would indicate success for an activity will vary widely across the set of activities, and all of these measures will not be applicable to every activity.

The purpose statements, the rationale or reason for collecting each metric, are given in table 1 below.

TABLE 1: Program-Level Metrics and Purpose Statements.

	Metric	Definition and Implementation	Purpose Statement
1	Number of Distinct Users	The number of distinct individual users (based on non-duplicated IP addresses) who request and/or receive products, services and/or other information during the reporting period.	To measure the size of the activity's user community, to be assessed in the context of its ESE role.

2	Characterization of Distinct Users Requesting Products and Information (by Internet domain)	Classes of users who obtain products and services from the project. The metric will show the relative proportion of users accessing data and services from a) first-tier domains: .com, .edu, .gov, .net, .mil, .org, summary of foreign countries, and unresolved , and b) second-tier domains, such as "nasa.gov", "unm.edu", etc.	To measure the types of users served by the activity, to be assessed in the context of its ESE role.
3	Number of Products Delivered to Users	The number of separately cataloged and ordered data or information products delivered to users during the reporting period (by project-defined product ID). A 'product' may consist of a number of items or files that comprise a single item in a product catalog or inventory; our intent is to capture the user view of the products provided by the project (e.g., Suppose a Vegetation Index map is a type of product that is generated and kept track of in the inventory on a regional and monthly basis. Then, if 30 users receive a Vegetation Index map of the Eastern U.S. for September 2001 count them as 30 products delivered).	To measure, in conjunction with items 4, 5, 6, and 7, the data and information produced and distributed by the activity, to be assessed in the context of its ESE role. A particular set of values for these metrics might be much smaller for one activity than another activity, but in each case could represent excellent performance, given the particular ESE role of each activity. The count of products delivered is a useful measure given the user oriented definition of a 'product' that is independent of how the product is constituted or how large it is.
4	Number of Distinct Product Types Produced and Maintained by Project	A product type refers to a collection of 'products' of the same type such as "sea surface temperature" products. The project may add many or few product types through time but these should be tracked independent of the number of 'products' delivered. (This metric is not expected to change frequently and may not require updates on a monthly basis).	See note in metric 3 above. The count of product types produced is a useful measure because of the effort by the activity required to develop and support each of its product types.
5	Volume of Data Distributed	The volume of data and/or data products distributed to users during the reporting period (in GB or TB as appropriate).	See note in metric 3 above. The volume distributed is a useful output measure but one which depends heavily on the particular types of data an activity produces and distributes and must be assessed in the context of the activity's ESE role and data it works with.
6	Total Volume of Data Available for Research and Other Uses	The total cumulative volume, as of the end of the reporting period, of data and products held by the project and available to researchers and other users (GB or TB). This number can include data that is not on-line but is available through other means.	See note in metric 3 above. The cumulative volume available for users provides a measure of the total resource for users that the activity creates.
7	Delivery Time of Products to Users	Response time for filling user requests during the reporting period. Averaged and standard deviation summary times are to be collected for both electronic (including subscription services) and physical hard media transfers.	See note in metric 3 above. The delivery times for electronic and/or media transfers to users is a measure of the effectiveness of the activity's service.

8	Support for the ESE Science Focus Areas *(when applicable)*	The REASoN projects will include a quantitative summary of the data products supporting one or more of NASA's science focus areas, and report any changes at the next monthly metrics submission. The focus areas are: weather, climate change and variability, atmospheric composition, water and energy cycle, Earth surface and interior, and carbon cycle and ecosystems.	To enable the ESE program office to determine which ESE science goals are supported by the activity, and to assess how the data products provided by the activity relate to that support.
9	Support for the ESE Applications of National Importance *(when applicable)*	The REASoN projects will include a quantitative summary of the data products supporting one or more of NASA's Applications, , and report any changes at the next monthly metrics submission.. The 12 applications areas are: agricultural efficiency, air quality, aviation safety, carbon management, coastal management, ecosystems, disaster preparedness, energy forecasting, homeland security, invasive species, public health, and water management.	To enable the ESE program office to determine which ESE applications goals are supported by the activity, and to assess how the data products provided by the activity relate to that support.
10	Support for ESE Education Initiatives *(when applicable)*	In partnership with the Study Manager the REASoN project will submit data pertaining to the adoption and use of educational products by noted audience categories (to be determined by project and study manager). These groups can include higher education, K-12, museums, informal education, and others as appropriate.	To enable the ESE program office to assess support provided by the activity to ESE education initiatives, by indicating use by education user groups of the activity's products and services.